REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 28, 2006, and the references cited therewith.

Claims 4, 5, 18 and 19 are canceled, and Claims 1, 6, 8, 15, 21, and 34 are amended to clarify that which Applicant deems to be the claimed invention. Claims 1-3, 6-17, and 20-38 are now pending in this application. Applicant respectfully submits that the amendments to the claims are supported by the originally filed application.

§101 Rejection of the Claims

The rejection of Claims 15-20 under 35 USC § 101 as being directed to non-statutory subject matter is hereby traversed and reconsideration thereof is respectfully requested. Claim 15, as amended herein, is directed to ***a computer readable medium having stored thereon a data structure for access by a program executing on a computer system.*** Claim 15 also recites, in relevant part, that the data structure comprises: ***a first data field comprising data representing information regarding a plurality of classes of digital ink strokes ...; and a second data field comprising trained information regarding curvature features of each of the digital ink strokes ..., said curvature features used in connection with determining one of said plurality of classes for a digital ink stroke.*** Applicant respectfully submits that Claim 15 recites a data structure stored on a computer readable medium for access by a program executing on a computer system. Claim 15 also recites a functional relationship between the first and second data fields of the data structure and the data structure is stored on a tangible medium, the computer readable medium.

In view of the foregoing, Applicant submits that Claims 15-20 are directed to statutory subject matter under 35 U.S.C. 101. Applicant respectfully requests that the rejection be reconsidered and withdrawn.

§102 Rejection of the Claims

The rejection of Claims 6-7, 12-16, and 18-20 under 35 USC § 102(e) as being anticipated by Cass et al. (U.S. Patent 6,304,674, hereinafter "Cass") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that this rejection as applied to Claims 18 and 19 is moot in view of the cancellation of Claims 18 and 19

herein. Applicant respectfully submits that pending Claims 6-7, 12-16 and 20, as amended, are herein are patentable over the cited reference.

Claim 6, as amended herein, recites a computer readable medium having computer-executable instructions. A digital ink file having at least one stroke therein is accessed. Curvature features of the at least one stroke are extracted. Based upon an analysis of the curvature features, it is determined whether the stroke is text. Based upon an analysis of the curvature features, it is determined whether the stroke is classified as an unknown stroke. Claims 7 and 12-14 depend from Claim 6.

Claim 15, as amended herein, recites a computer readable medium having stored thereon a data structure for access by a program executing on a computer system. The data structure includes a first data field and a second data field. The first data field includes data representing information regarding a plurality of classes of digital ink strokes. The plurality of classes includes at least one text class and at least one drawing class. The second data field includes trained information regarding curvature features of each of the digital ink strokes. The curvature features of a stroke comprise a discreet curvature of the stroke. The discreet curvature is defined using a difference between angles determined in accordance with points along the stroke. The curvature features are used in connection with determining one of the plurality of classes for a digital ink stroke. Claims 16, 17 and 20 depend from Claim 15.

Cass relates to a system and method for recognizing user specified pen gestures using Hidden Markov Models (HMMs). (Col. 1, Lines 16-18). Cass discloses sampling a gesture and computing features including the sine of the tangent angle, the cosine of the tangent angle, the derivative of the current tangent angle, and the distance of the current point from the center of the gesture. (Col. 3, Line 61-Col. 4, Line 8). Before gesture recognition takes place, training is initiated. (Col. 4, Lines 49-50). Figures 4 and 6 disclose steps for training. Figure 7 discloses steps for recognition. Each gesture is classified based on a score to determine the best subclass to which the gesture most likely belongs. Once the subclass is determined, the gesture class is consequently known. (Col. 7, Line 46-Col. 8, Line 12). Cass discloses gesture classes of a shape, letter, and a number. (Col. 3, Lines 45-56).

Applicant's Claim 6, as amended herein, is neither disclosed nor suggested by Cass in that Cass neither discloses nor suggests at least the features of ***a computer readable medium***

having computer-executable instructions, comprising, ... based upon an analysis of the curvature features, determining whether the stroke is classified as an unknown stroke, as recited in Claim 6.

As pointed out above, Cass's recognition mode processing of a gesture classifies the gesture into a subclass and class. Cass discloses gesture classes of shapes, letters and numbers but does not appear to disclose or suggest classifying a gesture as unknown. In contrast, Applicant's Claim 6 includes a recited step of ***based upon an analysis of the curvature features, determining whether the stroke is classified as an unknown stroke***, which is neither disclosed nor suggested by Cass.

For at least these reasons, the reference neither discloses nor suggests Claim 6, and claims that depend therefrom.

Applicant's Claim 15, as amended herein, is neither disclosed nor suggested by Cass in that Cass neither discloses nor suggests at least the features of ***a computer readable medium having stored thereon a data structure for access by a program executing on a computer system, the data structure comprising: ... a second data field comprising trained information regarding curvature features of each of the digital ink strokes, wherein the curvature features of a stroke comprise a discreet curvature of the stroke, the discreet curvature being defined using a difference between angles determined in accordance with points along the stroke, said curvature features used in connection with determining one of said plurality of classes for a digital ink stroke,*** as set forth in Claim 15.

As discussed above, Cass discloses features including the sine of the tangent angle, the cosine of the tangent angle, the derivative of the current tangent angle, and the distance of the current point from the center of the gesture. However, Cass neither discloses nor suggests a feature ***defined using a difference between angles determined in accordance with points along the stroke***, as recited in Claim 15.

For at least these reasons, the reference neither discloses nor suggests Claim 15, and claims that depend therefrom.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

§103 Rejection of the Claims

The rejection of Claims 1 and 3-5 under 35 USC § 103(a) as being unpatentable over Cass is hereby traversed and reconsideration thereof is respectfully requested. Applicant submits that this rejection as applied to Claims 4 and 5 is moot in view of the cancellation of Claims 4 and 5 herein. Applicant respectfully submits that Claims 1 and 3, as amended herein, are patentable over the cited reference.

Claim 1, as amended herein, recites a computer readable medium having computer-executable instructions. A plurality of stroke samples is accessed. The stroke samples represent more than one class. At least one class represented is a text class and at least one class represented is a drawing class. Curvature features of each of the strokes for each class are extracted. The curvature features are used in training a trainable classifier to classify strokes for each class. The curvature features of a stroke comprise a discreet curvature of the stroke. The discreet curvature is defined using a difference between angles determined in accordance with points along the stroke. Claim 3 depends from Claim 1.

The reference of Cass is summarized above.

Claim 1, as amended herein, is neither disclosed nor suggested by Cass in that Cass neither discloses nor suggests ***a computer readable medium having computer-executable instructions, comprising, ... using the curvature features, training a trainable classifier to classify strokes for each class, wherein the curvature features of a stroke comprise a discreet curvature of the stroke, the discreet curvature being defined using a difference between angles determined in accordance with points along the stroke,*** as set forth in Claim 1.

As discussed above, Cass discloses features including the sine of the tangent angle, the cosine of the tangent angle, the derivative of the current tangent angle, and the distance of the current point from the center of the gesture. However, Cass neither discloses nor suggests a feature ***defined using a difference between angles determined in accordance with points along the stroke***, as recited in Claim 1.

For at least these reasons, the reference neither discloses nor suggests Claim 1, and claims that depend therefrom.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claims 2, 8-11, and 17 under 35 USC § 103(a) as being unpatentable over Cass et al., in view of Burges is hereby traversed and reconsideration thereof is respectfully requested. Applicant submits that Claims 2, 8-11 and 17, as amended herein, are patentable over the cited references, taken separately or in combination.

Claim 2 depends from Claim 1. Claims 8-11 depend from Claim 6. Claim 17 depends from Claim 15. For reasons set forth above, Claims 1, 6 and 15 are neither disclosed nor suggested by Cass. For reasons set forth below, combining Cass with Burges also neither discloses nor suggests Clams 1, 6, and 15, or claims that depend therefrom.

Burges is cited on page 10 of the Office Action as support for disclosing use of a support vector machine (SVM) and the use of SVMs for handwriting recognition and classification. (Burges, p. 121, last paragraph).

Features of Claim 1 which are neither disclosed nor suggested by Cass are set forth above. Burges also appears silent regarding any disclosure or suggestions of the foregoing features of Claim 1. Thus, combining Burges with Cass does not overcome the deficiencies of Cass with respect to the foregoing recited features of Applicant's Claim 1.

The Office Action on page 10 states that it would have been obvious to use an SVM in lieu of, or in addition to, HMMs. Applicant respectfully submits that such a substitution or addition is not obvious. Based on what is disclosed in Cass, Applicant respectfully submits that it is not clear how, or even if, an SVM may be used in place of the HMM of Cass. Furthermore, the cited motivation for substituting an SVM in place of the HMM in Cass relates to using high dimensional feature vectors. Applicant respectfully submits that Cass does not appear to have such a problem since the feature vector of Cass does not appear to have a high dimensionality. Therefore, one would not be motivated to use an SVM rather than an HMM in Cass for this reason.

For at least these reasons, Claim 1, and claims that depend therefrom, are neither disclosed nor suggested by the references.

Regarding Claim 6, features of Claim 6 which are neither disclosed nor suggested by Cass are set forth above. Burges also appears silent regarding any disclosure or suggestions of the foregoing features of Claim 6. Thus, combining Burges with Cass does not overcome the deficiencies of Cass with respect to the foregoing recited features of Applicant's Claim 6.

For at least these reasons, Claim 6, and claims that depend therefrom, are neither disclosed nor suggested by the references.

Regarding Claim 15, features of Claim 15 which are neither disclosed nor suggested by Cass are set forth above. Burges also appears silent regarding any disclosure or suggestions of the foregoing features of Claim 15. Thus, combining Burges with Cass does not overcome the deficiencies of Cass with respect to the foregoing recited features of Applicant's Claim 15.

For at least these reasons, Claim 15, and claims that depend therefrom, are neither disclosed nor suggested by the references.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claims 21-24, 26, and 29-38 under 35 USC § 103(a) as being unpatentable over Altman et al. (U.S. Patent 5,517,578, hereinafter "Altman I") in view of U.S. Patent 6,304,674 by Cass et al. ("Cass") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 21-24, 26, and 29-38, as amended herein, are patentable over the references, taken separately or in combination.

Claim 21, as amended herein, recites a computer readable medium having computer-executable instructions. A digital ink file having a plurality of strokes therein is accessed. A class for each of the plurality of strokes is determined based upon an analysis of curvature features of the strokes. The step of determining includes determining whether each of the plurality of strokes is an unknown stroke. Some of the strokes are grouped based upon local characteristics of the strokes to form grouped strokes. Claims 22-24, 26, and 29-33 depend therefrom.

Claim 34, as amended herein, recites a computer readable medium having computer-executable instructions. A digital ink having a plurality of strokes therein is accessed. A class for each of the plurality of strokes is determined based upon an analysis of curvature features of the strokes. The determining step includes determining whether each of the plurality of strokes is an unknown stroke. Some of the strokes are grouped based upon characteristics of the plurality of strokes. Claims 35-38 depend therefrom.

Altman I relates to pen-based computing and grouping and manipulating ink stroke representations. (Col. 1, Lines 10-13). Altman's Figure 2B discloses processing performed when

the user selected mode is "modeless" . Step 53 performs gesture recognition on the stroke. Step 54 determined whether the stroke is a drawing gesture or a figure. If so, control proceeds to step 57 where the stroke is sent to the drawing layer for processing. Otherwise, control proceeds to step 55 where the stroke is sent to the writing layer for processing. (Figure 2B; Col. 6, Lines 9-23).

Cass is cited on page 12 of the Office Action as support for disclosing use of curvature features such as the sine and cosine of tangent angles for stroke segments.

Claim 21, as amended herein, is neither disclosed nor suggested by the references, taken separately or in combination, in that the references neither disclose nor suggest at least the features of ***a computer readable medium having computer-executable instructions, comprising, ...determining a class for each of the plurality of strokes based upon an analysis of curvature features of the strokes, wherein said determining includes determining whether each of the plurality of strokes is an unknown stroke,*** as recited in Claim 21.

As set forth above, Altman I discloses classifying a gesture for drawing processing or writing processing and neither discloses nor suggests classifying a gesture as an unknown gesture. Cass's recognition mode processing of a gesture classifies the gesture into a subclass and class. Cass discloses gesture classes of shapes, letters and numbers but does not appear to disclose or suggest classifying a gesture as an unknown gesture. Accordingly, the references neither disclose nor suggest at least the foregoing recited features of Claim 21.

For at least these reasons, the references neither disclose nor suggest Claim 21, and claims that depend therefrom.

Claim 34 recites features similar to those set forth in Claim 21 and is neither disclosed nor suggested by the references for reasons similar to those set forth regarding Claim 21. In particular, amended Claim 34 is neither disclosed nor suggested by the references, taken separately or in combination, in that the references neither disclose nor suggest at least the features of ***a computer readable medium having computer-executable instructions, comprising, ... determining a class for each of the plurality of strokes based upon an analysis of curvature features of the strokes, wherein said determining includes determining whether each of the plurality of strokes is an unknown stroke***, as set forth in Claim 34.

For at least these reasons, the references neither disclose nor suggest Claim 34, and claims that depend therefrom.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claims 25, 27-28 under 35 USC § 103(a) as being unpatentable over Altman I in view of Cass, and further in view of Altman et al. (U.S. Patent Application Publication 2002/0064308A1, hereinafter "Altman II") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 25 and 27-28 are patentable over the cited references, taken separately or in combination.

Claims 25 and 27-28 depend from Claim 21. For reasons pointed out above, Claim 21, or claims that depend therefrom, are neither disclosed nor suggested by Cass and Altman I. For reasons set forth below, combining Cass and Altman I with Altman II also neither discloses nor suggests Claim 21, or claims that depend therefrom.

Altman II is cited on page 17 of the Office Action as support for disclosing grouping of certain strokes based on local characteristics that include the relative aspect ration of the strokes. (Col. 18, Lines 14-24 of Par. 130).

Features of Claim 21 which are neither disclosed nor suggested by Cass and Altman I are pointed out above. Altman II also appears silent regarding any disclosure or suggestion of the foregoing features of Claim 21. Thus, combining Cass and Altman I with Altman II does not overcome the deficiencies of Cass and Altman I with respect to Applicant's Claim 21.

Accordingly, the references neither disclose nor suggest at least the foregoing recited features of Claim 21.

For at least these reasons, the references neither disclose nor suggest Claim 21, and claims that depend therefrom.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (425-707-9382) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 500463.

Respectfully submitted,

Customer No. 22971

425-707-9382

Date 11/21/06

By _____
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 29 day of November, 2006.

Laura Bray
Name

Signature